



SHOUL DER-SHOULDER FTW BURY END 10:1 OR FLATTER SLOPE-15:1 OR FLATTER FLARE, CALTRANS APPROVED 31" IN-LINE NOTE 10 25'-0" Min TERMINAL SYSTEM END TREATMENT 25'-0" PARABOLA SEE NOTE 12 IN SLOPE 3'-8" Min SEE NOTE 14 SEE NOTES 5 AND 6 EDGE OF PAVED HMA DIKE, TYPE C SEE NOTE 9 SHOULDER OR OFFSET LINE OF TRAVELED WAY FRONT FACE OF ADDITIONAL HMA DIKE, TYPE HMA DIKE 1'-0" Max OFFSET FOR 15:1 FLARE SEE NOTE 9 25'-0" Min, SEE NOTE 9 6:1 TAPER TO 3'-0" Typ FROM ES TYPE 16K LAYOUT CENTER OF END POST (MGS installation at roadside fixed object or objects with a buried end anchor treatment and a 31" in-line end treatment at the ends of railing) BURIED POST END ANCHOR, SEE NOTE 11 See Note 8 FIXED OBJECT (BRIDGE COLUMNS, OVERHEAD SIGN SUPPORT, etc.) BEGIN 15:1 OR FLATTER FLARE 4'-0" Min, SEE NOTE 4 3'-8" Min 6'-3" POST SPACING SEE NOTE 14 SEE NOTE 14 HINGE POINT SEE NOTE 14 SHOULDER SHOULDER EDGE OF PAVED SHOULDER OR FTW-15:1 OR FLATTER FLARE, SEE NOTE 10 FLATTER SLOPE OFFSET LINE OF TRAVELED WAY OF RAII IN SLOPE CALTRANS APPROVED 31" FLARED TERMINAL SYSTEM END TREATMENT 25'-0" Min 25'-0" PARABOLA SEE NOTE 12 EDGE OF PAVED ADDITIONAL SEE NOTE 6 SHOULDER OR OFFSET LINE OF TRAVELED WAY HMA DIKE, TYPE C, HMA DIKE, TYPE C 1'-0" Max OFFSET FOR 15:1 FLARE HMA DIKE 25'-0" Min, SEE NOTE 9 SEE NOTE 9 SEE NOTE TYPE 16L LAYOUT

NOTES:

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- Line post, blocks and hardware to be used are shown on Standard Plans A77L1, A77L2, A77N1, A77N2 and A77M1.
- 2. MGS post spacing to be 6'-3" center to center, except as otherwise noted.
- 3. Except as noted, line posts are 6" \times 8" \times 6'-0" wood with 6" \times 8" \times 1'-2" wood blocks. W6 \times 8.5 or W6 \times 9 steel posts, 6'-0" in length, with 6" \times notched wood blocks or notched recycled plastic blocks may be used for 6" \times 8" \times 6'-0" wood posts with 6" \times 8" \times 1'-2" wood blocks where applicable and when specified.
- 4. A 4'-0" minimum clearance is required between the face of the railing and the face of a fixed object located directly behind MGS sections with post spacing at 6'-3". Construct MGS as shown in the detail "Strengthened Midwest Guardrail System Sections for Fixed Objects" on this plan, where the clearance between the face of the railing and the face of a fixed object is less than 4'-0", but not less than 3'-0". Where the clearance is less than 3'-0", a concrete wall or barrier should be constructed to shield the fixed object. wall or barrier should be constructed to shield the fixed object(s).
- 31" in-line terminal system end treatments are used where site conditions will not accommodate a 31" flared end treatment.

- (MGS installation at roadside fixed object or objects with a buried end anchor treatment and a 31" flared end treatment at the ends of railing)
 - See Note 8 6. The type of 31" terminal system to be used will be shown on the Project Plans.

 - 7. As site conditions dictate, construct additional MGS to shield fixed object(s). Additional MGS length equal to multiples of 12'-6". Post spacing at 6'-3", except as specified in Note 4.
 - Layout Types 16D through 16L, shown on the A77R Series of Standard Plans are typically used where MGS is recommended to shield roadside fixed object(s) and a crashworthy 31" end treatment is required for both directions of traffic.
 - 9. Where placement of dike is required with MGS, see Standard Plan A77N4 for dike positioning details.
 - 10. The 15:1 or flatter flare for the buried post anchor is based on the edge of the paved shoulder or offset line of edge of the traveled way. The length of MGS within the 15:1 or flatter flare is based on site conditions and should be a length equal to multiples of 12'-6".
 - 11. For details of Buried Post End Anchor, see Standard Plan A77T2.
 - 12. For typical flare offsets for 25'-0" length parabola with maximum offset of 1'-0", see Standard Plan A77P1.

- 13.W6 x 15 steel post, 8'-0" in length, with 8" x 8" x 1'-2" notched wood block or notched recycled plastic blocks may be used in place of the s 10" x 10" x 8'-0" wood post with 8" x 8" x 1'-2" wood block shown in the detail "Strengthened Midwest Guardrail System Sections for Fixed Object"
- 14. Use this offset for 8" block, For 12" block use minimum 4'-0" offset.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

MIDWEST GUARDRAIL SYSTEM TYPICAL LAYOUTS FOR ROADSIDE FIXED OBJECTS

NO SCALE

A77R8